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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/452,930	12/02/1999	CARL E. RADZIO JR.	79189CEB	1934
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1333 7590 05/13/2002

PATENT LEGAL STAFF  
EASTMAN KODAK COMPANY  
343 STATE STREET  
ROCHESTER, NY 14650-2201

EXAMINER

HECKENBERG JR, DONALD H

ART UNIT

PAPER NUMBER

1722

DATE MAILED: 05/13/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

TC-9

# Office Action Summary

Application No.

09/452,930

Applicant(s)

RADZIO ET AL.

Examiner

Donald Heckenberg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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1. The following is a quotation of the first paragraph of 35

U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-4, and 7-10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 now recites at lines 15-20:

"...a pressure relief valve located on said mold parting line against said first molten resin flow path at said terminal end of said hollow and adapted to release said molten resin from said first molten resin flow path into said second molten resin when pressure of said molten resin in said first molten resin flow path exceeds a predetermined value thereby simultaneously releasing said molded part from said non-metallic mold."

This limitation of the pressure relief valve opening while, simultaneously, the molded part is released is new matter, as it has not previously been described in the application.

Claims 1-4 and 7-10 are also rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not

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described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As noted above, claim 1 recites that molten resin's excess pressure causes the pin member to retract and thereby open the first resin path to a second molten resin flow path, while simultaneously releasing the molded part from the mold. This limitation does not make sense as it requires the resin to be in a molten state to retract the pin member, while at the same time requires the resin to be hardened into a complete product such that it can be released from the mold.

In order to evaluate this limitation in terms of the prior art below, the claim will be interpreted as reading that the pin is maintained in a retracted state, while the molded product is simultaneously released from the mold, rather than the valve being opened while simultaneously the mold is opened.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claim 1-4 and 7-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As noted above in the rejection under 35 U.S.C. 112, first paragraph, claim 1 recites the limitation that the molten resin's excess pressure causes the pin member to open the pressure relief valve while the product is ejected from the mold. As this limitation is not defined in the disclosure, this claim is indefinite as it does not accurately define the invention. See In re Knowlton, 481 F.2d 1357, 178 USPQ 486 (Cust. & Pat. App. 1973).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for

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establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 3-4, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimoto et al. (US Pat. No. 5,350,288; previously of record) in view of Nomura et al. (US Pat. No. 5,156,754; previously of record).

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Kimoto teaches an injection molding apparatus comprising a screw cylinder (4) having a tip, a nozzle (9) at the tip, and a thread-screw (3) advanceable in the screw cylinder for injecting the resin from the nozzle, the mold also comprising a cavity mold (33) and a core mold (34) forming a hollow (42) therebetween for forming an injected molded product therein, a first molten resin flow path (39 and 42) extending from inside the screw cylinder to a terminal end of the hollow, and a pressure relief valve (40) located on the resin flow path at the terminal end of the hollow. The valve of Kimoto is such that the valve would remain in an open state while simultaneously the product is ejected from the mold (see figs. 1-2). Kimoto teaches the pressure relief valve to comprise a movable pin actuated by a spring bias (50), the movable pin (48) being adapted for movement between a first position blocking the resin when the pressure is less than a predetermined value, and to a second position releasing the resin into a second molten resin flow path in fluid communication with the first resin flow path thereby relieving pressure in the first path (col. 5, ln. 55 - col. 6, ln. 5). Kimoto further teaches the mold to comprise stationary and movable portions for accessing the cavity along a parting line (51) with the valve located on the parting line.

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Kimoto fails to teach the injection mold to be made from cast epoxy and thermo-set materials.

Nomura teaches the making of injection molds from cast-epoxy and thermosetting materials because of the ease of which the molds may be made (col. 1, lns. 17-24).

It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to have modified the apparatus of Kimoto as such to have made the mold from cast-epoxy and thermosetting material because it would be easy to construct the mold from these materials as suggested by Nomura.

8. Claims 2, and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimoto modified by Nomura as applied to claims 1, 3-7, and 10 above, and further in view of Valyi (US Pat. No. 3,670,066; previously of record) and Gardner (US Pat. No. 4,342,717; previously of record).

Kimoto and Nomura disclose the apparatus as described above. Kimoto and Nomura fail to teach the relief valve to be adjustable for accommodating resin with different pressure and flow characteristics, with the valve being adjusted by a threaded screw supporting the spring bias biasing the movable pin.



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Valyi teaches an injection molding apparatus wherein a relief path (35) is created with using a spring biased valve (36) wherein the spring bias (24) is held by a threaded screw (26).

It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to have modified the apparatus of Kimoto and Nomura as such to have used a threaded screw arrangement to support the spring bias because this is a suitable arrangement for the construction of a relief valve as taught by Valyi and further because this would allow for adjustment of the spring bias acting on the valve. It is further noted that generally the provision apparatus adjustability, where needed, is seen as an unpatentable advance. In re Stevens, 212 F.2d 197, 101 USPQ 284 (Cust. & Pat. App. 1954). The reference Gardner is cited as further showing that the provision of making pressure relief valves adjustable is known in the art, as Gardner teaches a relief valve structure (26) with a spring bias (25), the valve being adjustable to accommodate different molding conditions (see col. 3, lns. 25-32).

9. Applicant's arguments filed February 26, 2002 have been fully considered but they are not persuasive.

The Applicant argues that the pressure relief valve of the instant application provides for the simultaneous release of the molten resin and the molded part when pressure is exceeded in the first flow path.

As indicated above in the rejection under 35 U.S.C. 112, this limitation is not understood. Specifically, it is not understood how the resin could still be in a molten state as to cause the pressure relief valve to open, while simultaneously the molding is completed as such to allow the molded product to be ejected from the mold. As best interpreted, the prior art of record still renders the Applicant's invention obvious as described above.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated

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from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

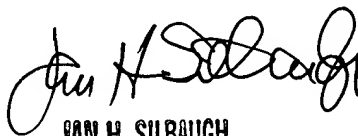
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald Heckenberg whose telephone number is (703) 308-6371. The examiner can normally be reached on Monday through Friday from 9:30 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Jan Silbaugh, can be reached at (703) 308-3829. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for responses to non-final action, and 703-872-9311 for responses to final actions. The unofficial fax phone number is (703) 305-3602.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Donald Heckenberg  
May 7, 2002

  
JAN H. SILBAUGH  
SUPERVISORY PATENT EXAMINER  
ART UNIT 1722

05/09/02